

## A STUDY ON ATTITUDE OF URBAN AND RURAL COLLEGE STUDENT TEACHERS TOWARDS SCIENCE

By

S.PRAKASH \*

S. AMALADOSS XAVIER \*\*

*\* Research Scholar, Manonmaniam Sundaranar University, Tirunelveli.*

*\*\* Assistant professor in Physical Science, St. Xavier's College of Education, Palayamkottai.*

### ABSTRACT

*There is a great need to identify and develop positive attitude towards science subject of student teachers. The time has come to increase our efforts to develop positive attitude towards science subject among teachers, student teachers and school children. This is an immediate requirement of the present day. This paper reports on attitude of student teachers towards science with respect to their locality of the college. The sample consists of 1080 student teachers of Madurai revenue district. A scale on attitude towards science was used to get the data from the student teachers. Percentage Analysis, Mean, Standard Deviation and 't' tests were used for analyzing the data. The results showed that there is no significant difference in attitude towards science of urban and rural student teachers.*

*Keywords: Attitude Towards Science, Student Teachers, Locality of the College.*

### INTRODUCTION

Science is one of those human activities that man has created to gratify certain human needs and desires. Curiosity has been the greatest motive power of scientific research. The search for truth has become the dominant in persuasion of science. As it is under persuasion since so many centuries it has attracted the attention of a much persisted group of people. (Conant, 1951)

Science is no longer confined to a few seriously devoted persons. Since the life in the present world invariably warrants to variable degrees of scientific facts and laws, science has now become a part of general education. (Best, 1982) Science takes its place side by side with other subjects as an essential element of one's education. It affords knowledge of certain facts and laws and an insight into methods and data peculiar to the domain of science. (Sharma, 1989) However, the inclusion of any subject in the curriculum should satisfy the intellectual, utilitarian, vocational, cultural, moral and aesthetic values. Besides these, the teaching of science imparts training in the scientific method and develops positive attitude towards science subject, scientific aptitude, which are very valuable and at the same time are transferable to other situations in the life of the learners.

The qualities imbibed by the learner through learning science are of great value to the citizens living in the society. (Vaidya & Narendra, 1976)

The Scientific Policy Resolution of the Govt. of India (1958) states that "The dominating feature of the contemporary world is the intense cultivation to meet the country's requirement. Science has now become a compulsory subject in the school curriculum in every system of school education right from the elementary stage, because of its multifarious values gifted to the individual as well as to the society." (Bhaskar Rao, 1997)

An attitude is an emotional reaction towards a person or thing. It is a personal response to an object, developed through experience which can be characterized as favourable or unfavourable. (Hilgard, Atkinson & Atkinson, 1958). The use of science as the object or stimulus of these feelings delineates that set of attitudes known as 'attitude towards science' (Bhandula et al., 1985)

### Need for the Study

As one of the researchers and a teacher educator working in self finance teacher education institution, the investigator had informal chats with the B.Ed. students and came to know about their level of attitude towards

science. The author came to know that many student teachers did not possess adequate level of attitude towards science which is very much needed for them to undergo teacher education programme successfully that would help them to become successful teachers in the future and prepare the youngers for a bright future of the nation. As science is a universal subject, the investigator wanted to study the effect of locality on the college of student teachers upon attitude towards science. Under these circumstances, the investigator has decided to undertake a study on attitude of urban and rural college student teachers towards science.

## Objectives

- To find out the level of attitude towards science and its dimensions of student teachers.
- To find out whether there is any significant difference in the attitude towards science and its dimensions of student teachers with respect to their locality of the college

## Hypotheses

- The level of attitude towards science and its dimensions of student teachers is moderate.
- There is no significant difference in the attitude towards science and its dimensions of student teachers with respect to their locality of the college..

## Methodology

Survey method of research was adopted for the study. (Garrett & Woodworth, 1969)

## Population and Sample for the Study

The population for the present study consists of all B.Ed. students of Madurai revenue district. 1080 B.Ed. students from 20 colleges of education, Madurai revenue district were selected through Random Sampling Technique for the study. The overall response rate was 82%

## Tools Used for the Study

For the present study, the investigator used the following tools,

- Attitude towards Science Scale prepared and validated by the investigator.
- A Likert scale was constructed. (Edwards, 1967). The

questionnaire consists of 25 items. Among them 13 are positive items and 12 are negative items. The tool includes four dimensions namely personal confidence about the subject matter, involvement with the subject, usefulness of the subject content and perception of teacher's attitude. Few sample statements are given below.

- I am sure that I can learn science
- Science has been my worst subject.
- I watch science related TV programme at least once a month
- I am afraid of doing science experiments inside the class room
- Science is a worthwhile, necessary subject
- I would talk to my science teacher about a career which uses science.
- Personal Data Sheet prepared by the investigator.

## Data Analysis

To interpret the raw data, analyses were done using Percentage Analysis, Mean, Standard Deviation and 't' test. The results of the analyses are presented in the following tables 1, 2, 3.

1. The level of attitude towards science and its dimensions of all student teachers is moderate
2. The level of attitude towards science and its dimensions of student teachers in terms of locality of the college is moderate.

## Null Hypotheses

3. There is no significant difference in the attitude towards science and its dimensions of student teachers with respect to their locality of the college.

It is inferred from the table 3 that there is no significant difference between urban college student teachers and rural college student teachers in their attitude towards science in total and its dimensions personal confidence about the subject matter, involvement with the subject, and usefulness of the subject content, whereas there is significant difference between urban and rural college student teachers in the dimension perception of teacher's attitude.

From the mean value, it is found that urban college

student teachers ( $M=11.13$ ,  $S=2.772$ ) are better in their perception of teacher's attitude than rural college student teachers ( $M=10.77$ ,  $S=2.803$ ).

## Findings

1. a) 22.9% of the student teachers have high level of personal confidence about the subject matter.
- b) 25.9% of the student teachers have high level of involvement with the subject.
- c) 27.6% of the student teachers have high level of usefulness of the subject content.
- d) 28% of the student teachers have high level of perception of teacher's attitude.
- e) 25.1% of the student teachers have high level of attitude towards science in total. (From table 1)
2. a) 26.7% of the urban college student teachers have high level of personal confidence about the subject matter and 20.1% of the rural college student teachers have high level of personal confidence about the subject matter.
- b) 24.7% of the urban college student teachers have high level of involvement with the subject and 26.8% of the

Dimensions	Low		Moderate		High	
	N	%	N	%	N	%
Personal Confidence about the subject matter	257	23.8	576	53.3	247	22.9
Involvement with the subject	279	25.8	521	48.2	280	25.9
Usefulness of the subject content	289	26.8	493	45.6	298	27.6
Perception of teacher's attitude	322	29.8	456	42.2	302	28.0
Attitude towards science in total	278	25.7	531	49.2	271	25.1

**Table 1. Level of attitude of student teachers towards science and its dimensions**

Dimensions	Locality	Low		Moderate		High	
		N	%	N	%	N	%
Personal confidence about the subject matter	Urban	110	24.0	225	49.2	122	26.7
	Rural	147	23.6	351	56.3	125	20.1
Involvement with the subject	Urban	120	26.3	224	49.0	113	24.7
	Rural	159	25.5	297	47.7	167	26.8
Usefulness of the subject content	Urban	116	25.4	205	44.9	136	29.8
	Rural	173	27.8	288	46.2	162	26.0
Perception of teacher's attitude	Urban	126	27.6	187	40.9	144	31.5
	Rural	196	31.5	269	43.2	158	25.4
Attitude towards science in total	Urban	121	26.5	210	46.0	126	27.6
	Rural	157	25.2	321	51.5	145	23.3

**Table 2. Level of attitude of student teachers towards science and its dimensions in terms of locality of the college**

rural college student teachers have high level of involvement with the subject.

c) 29.8 % of the urban college student teachers have high level usefulness of the subject content and 26.0% of the rural college student teachers have high level of usefulness of the subject content.

d) 31.5% of the urban college student teachers have high level of perception of teacher's attitude and 25.4% of the rural college student teachers have high level of perception of teacher's attitude.

e) 27.6 % of the urban college student teachers have high level of attitude towards science in total and 23.3% of the rural college student teachers have high level of attitude towards science in total. (From table 2)

3. There is no significant difference between urban college student teachers and rural college student teachers in their attitude towards science in total and its dimensions personal confidence about the subject matter, involvement with the subject, and usefulness of the subject content, whereas there is significant difference between urban and rural college student teachers in the dimension perception of teacher's attitude. (From table 3)

## Discussion

From the present investigation, it is found that only 25.1% of the sample has high level of attitude towards science. While studying in terms of dimensions of attitude towards science, very small amount of the respondents have high

Dimensions	Nature of the college	Mean	SD	Calculated 't' Value	'p' Value	Remarks at 5% Level
Personal confidence about the subject matter	Urban	26.13	5.131	1.402	0.161	NS
	Rural	25.71	4.806			
Involvement with the subject	Urban	25.97	5.037	0.343	0.732	NS
	Rural	26.08	5.178			
Usefulness of the subject content	Urban	20.74	4.676	1.467	0.143	NS
	Rural	20.31	4.804			
Perception of teacher's attitude	Urban	11.13	2.772	2.056	0.040	S
	Rural	10.77	2.803			
Attitude towards science in total	Urban	84.02	13.462	1.901	0.058	NS
	Rural	82.44	13.559			

**Table 3. Significant difference between urban and rural college student teachers in their attitude towards science and its dimensions**

level of personal confidence about the subject matter, involvement with the subject, usefulness of the subject content and perception of teacher's attitude. Moreover majority of the sample have moderate level of attitude towards science and its dimensions. This implies that the student teachers might have been exposed to minimum levels of science activities in their under graduate level and hence they possess a moderate level of attitude towards science.

With the sample of the study classified in terms of their locality of the college, it is observed that the 27.6 % of urban college student teachers have high level of attitude towards science and only 27.3 % of rural college student teachers have high level of attitude towards science. In the dimensions, personal confidence about the subject matter, involvement with the subject, usefulness of the subject content and perception of teacher's attitude urban college student teachers are found to be better than the rural college student teachers. This may be due to the fact that urban college student teachers have opportunities of better infrastructural facilities, versatile and qualified faculties and use of technological resources.

From the analysis of data in the present investigation, urban college and rural college student teachers do not differ significantly in their personal confidence about the subject matter, involvement with the subject and usefulness of the subject content and attitude towards science in total whereas they differ significantly in their perception of teacher's attitude. This may be due to the fact that urban college student teachers feel free to talk to their teachers and clarify their doubts regarding the subject and their career than rural college student teachers.

## Recommendations

The authors suggested the following for improving the attitude towards science of student teachers:

- It is found that attitude towards science of student teachers is moderate. The rural teacher educational institutions should provide rich environment to improve the science learning skill of the student

- Science exhibitions should be organized in institutions to stimulate student teachers natural curiosity.
- Science club, Eco club and Nature club should be established in institutions to encourage the student teachers to participate in club activities.
- The institution should arrange outdoor activities like gardening, nature walk, visiting industries, camping in order to increase the attitude of student teachers in science.
- Student teachers should be encouraged to read magazines and journals that deal with science.
- Co-curricular and Extracurricular activities should be encouraged to promote awareness about science.
- The mass media available may be properly utilized to create awareness towards science.
- The institution should provide high quality teacher educators to teach science.

## Conclusion

The author concluded that the locality-wise analysis on attitude of student teachers towards science brought out the fact that the rural college student teachers are lacking in personal confidence about the subject matter, involvement with the subject, usefulness of the subject content, perception of teacher's attitude and attitude towards science in total.

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## ABOUT THE AUTHORS

Mr.S.Prakash is a research scholar at Manonmaniam Sundaranar University, Tirunelveli. Presently he is working as Assistant Professor in Physical science at Velammal College of Education, Ladenendal, Sivagangai district, Tamilnadu. He has obtained bachelor degree in chemistry at American college, Madurai and Master degree in chemistry at Madura college, Madurai. He completed his B.Ed., M.Ed. and M.Phil degrees in Education from Madurai Kamaraj University, Madurai. He has 7 years of teaching experience in colleges of Education. He has published 6 research articles and presented 15 papers. His areas of interest are science education, guidance and counselling and educational psychology.



Dr S Amaladoss Xavier, SJ is currently working as an Assistant Professor in Physical Science at St Xavier's College of Education, Palayamkottai, TamilNadu. He has completed M.Sc., M.Phil. in Chemistry, M.Ed and Doctorate in Education, and MBA. He has 12 years working experience as PG Assistant in Chemistry. He has published more than 30 Research articles and presented 35 papers in National and International seminars. He has also received the Best Chemistry Teacher Award in 1998-1999 from Jain Mahavir Association, Chennai. His areas of interest are research, soft skills and educational psychology.

